PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference PCT205-3	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2005/001663	04.02.2005	16.02.2004

International Patent Classification (IPC) or both national classification and IPC

Applicant
SANDEN CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☐ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☐ Box No. VII — Certain defects in the international application
- ☐ Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2005/001663

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ in written format

      ☐ in computer readable form

   c. time of filing/furnishing

      ☐ contained in the international application as filed.

      ☐ filed together with the international application in computer readable form.

      ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2005/001663

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	8, 10	YES
	Claims	1-7, 9, 11, 12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP 5-106931 A (Matsushita Refrigeration Co.),
27 April 1993, Paragraphs 0003, 0006, and 0010-0015; Figs. 1-3 and 5

Document 2: JP 2003-211953 A (Sanden Corp.),
30 July 2003, Claims 8 and 9

Document 3: JP 63-172863 A (Daikin Industries, Ltd.),
16 July 1988, Page 2, upper right column, line 18 to page 3, upper left column, line 18; page 4, lower left column, line 10 to page 4, lower right column, line 17; Tables 1 and 2; Figs. 1, 2, and 4

Documents 1-3 are cited in the ISR.

The invention of claim 1 does not appear to involve an inventive step based on document 1 (paragraphs 0003, 0006, and 0010-0015; Figs. 1-3 and 5). Replacing a variable capacity type compressor described in document 1 by a fixed capacity type compressor can easily be achieved by a person skilled in the art.

The invention of claim 2 does not appear to involve an inventive step based on documents 1 and 2 (claims 8 and 9). When the inverter compressor of document 1 is operated alone (the variable capacity type compressor is stopped), referring to the outside air temperature, the temperature inside the car, and the blower air volume, but not to the rotating speed of the drive source of the variable capacity type compressor does not require special creativity for a person skilled in the art.

The invention of claim 3 does not appear to involve an inventive step based on documents 1 and 2. Inputting the detection signal for estimating the heat load of document 2 to the outdoor unit control means of document 1 can easily be achieved by a person skilled in the art.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

The invention of claim 4 does not appear to involve an inventive step based on document 1. A compression mechanism of variable capacity by means of a volume control signal or a rotating speed control is well-known technology.

The invention of claim 5 does not appear to involve an inventive step based on document 3 (page 2, upper right column, line 18 to page 3, upper left column, line 18; page 4, lower left column, line 10 to page 4, lower right column, line 17; Tables 1 and 2; Figs. 1, 2, and 4). Using the unloader mechanism described in document 3 to replace an adjusted capacity compressor by a fixed capacity type compressor can easily be achieved by a person skilled in the art.

The invention of claim 6 does not appear to involve an inventive step based on document 3. A compression mechanism of variable capacity by means of a volume control signal or a rotating speed control is well-known technology.

The invention of claim 7 does not appear to involve an inventive step based on documents 1 and 3. Adding the feedback control for an inverter compressor based on evaporation temperature and difference from a target value described in document 3 to the inverter compressor control of document 1 can easily be achieved by a person skilled in the art.

The invention of claim 9 does not appear to involve an inventive step based on documents 1, 2, and 3. When the inverter compressor of document 1 is operated alone (the variable capacity type compressor is stopped), referring to the outside air temperature, the temperature inside the car, and the blower air volume, but not to the rotating speed of the drive source of the variable capacity type compressor does not require special creativity for a person skilled in the art.

The invention of claim 11 does not appear to involve an inventive step based on documents 1, 2, and 3. Application of the detection signal for estimating the heat load of document 2 to the outdoor unit control means of document 1 can easily be achieved by a person skilled in the art.

The invention of claim 12 does not appear to involve an inventive step based on documents 1 and 3. A compression mechanism of variable capacity by means of a volume control signal or a rotating speed control is well-known technology.

Performing feed-forward control of the second compressor of the inventions of claims 8 and 10 for a specified time and switching to the simultaneous operation with the first compressor is not described in any of the documents cited in the ISR and is not obvious to a person skilled in the art.